New York State Integrated Pest Management Program

Analysis of Onion Management Practices as they relate to levels of Aspergillus niger (Black Mold) and Development of IPM scouting protocols for Black mold

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Abstract:

The last four years, black mold (Asperigillus niger) has increasingly been a problem for Orange county onion growers. We intended to see if the procedure of rolling early season onions with green tops, prior to harvest, was creating wounds and openings through which wind blown and/or soilborne inoculum of black mold was infecting the outer scales of onion bulbs. Black mold favors high temperatures. Temperatures generally are quite warm during late July and early August when rolling usually occurs. We also looked at undercutting, lifting and windrowing. We thought these practices might reduce black mold by drying the onions without making wounds.

What we actually found was quite surprising. The summer of 1999 was very dry. For most of the Orange county onion growing region, rainfall was well below average or practically non existent. All of the onion crop went down early. This situation did not allow for growers to roll their onions. We were able to compare undercutting, lifting and windrowing with the lack of these practices and found surprising results. Although with only one year of data, our results suggest it might be better to simply harvest the onions and not disturb them in any way prior to harvest. Most results showed increased black mold when the onions were undercut, lifted or windrowed.

Four growers cooperated with the study. Eight fields were divided in half (sixteen plots). Five onion varieties were looked at. Fields were scouted at least once per week. Data was collected on insect and disease levels. Specific black mold evaluations were carried out twice during the growing season and again just before harvest. While mid season black mold evaluations revealed no disease, we did seem to see a connection between pre harvest black mold levels and subsequent levels after ten weeks in storage. Techniques used could be taught to inexperienced but conscientious scouts and black mold scouting could be incorporated into future scouting procedures. This information will help growers make better post harvest management decisions

For a printed copy of the entire report, please contact the NYS IPM office at:

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